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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,597	03/01/2002	Hidekazu Kobayashi	81756.0001	7669

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HOGAN & HARTSON L.L.P.
500 S. GRAND AVENUE
SUITE 1900
LOS ANGELES, CA 90071-2611

EXAMINER

COLON, GERMAN

ART UNIT PAPER NUMBER

2879

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,597

Applicant(s)

KOBAYASHI ET AL.

Examiner

German Colón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 14-24 is/are rejected.
- 7) ☒ Claim(s) 18 and 23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/297482.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2,6</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Claim Objections

1. Claims 18 and 23 are objected to because of the following informalities:

Claims 18 and 23 comprises the term “and/or” which could render the claim indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner suggest a rephrasing of the claims such as “...wherein at least one of...” to overcome the objection.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 14, 15, 19, 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang (US 5,276,380) in view of Miyashita et al. (WO 98/24271).

Regarding claim 14, Tang discloses a method of manufacturing an EL element comprising:

forming a first electrode group **107** by a predetermined arrangement of a plurality of first electrodes on a substrate;

forming a bank group **109** by a predetermined arrangement of a plurality of banks intersecting with the first electrode group;

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forming an EL material layer 103 by depositing an EL material in between the banks; and forming a second electrode group R separated by the banks by depositing a second electrode material onto the EL material layer.

Tang fails to disclose the EL layer being formed by an ink-jet method; Tang discloses a vapor deposition method.

However, in the same field of endeavor, Miyashita discloses a method of producing organic EL elements and teaches that forming the EL layers with an ink-jet system makes possible to easily effect the patterning within short periods of time while maintaining precision, to easily design films, to optimize the light-emitting property, and to easily adjust the light-emitting efficiency. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Miyashita of forming the EL layers with an ink-jet method in order to easily effect the patterning within short periods of time while maintaining precision, to easily design films, to optimize the light-emitting property, and to easily adjust the light-emitting efficiency.

Regarding claim 15, Tang discloses the banks being formed such that an angle between side-faces thereof and a face on which the banks are installed is a right angle, and the second electrode group is formed by depositing the second electrode material by oblique vapor deposition from a direction confronting the sides (see Fig. 2 and Col. 6, lines 39-40 and 54-57).

Referring to claim 19, Tang discloses the arrangement being a parallel arrangement (see Fig. 2).

Referring to claim 20, Tang discloses the banks being formed such that an angle between side-faces thereof and a face on which the banks are installed is a right angle, and the second

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electrode group is formed by depositing the second electrode material by oblique vapor deposition from a direction confronting the sides (see Fig. 2 and Col. 6, lines 39-40 and 54-57).

Referring to claim 24, Tang discloses the arrangement being a line arrangement.

4. Claims 16, 17, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang- Miyashita as applied to claim 19 above, and further in view of Shi et al. (U 5,773,931).

Regarding claim 16, Tang-Miyashita discloses the claimed invention except for the limitation of "the banks being formed such that an angle between at least one side face of the banks and a face on which the banks are installed is an acute angle, and the second electrode group is formed by depositing the second electrode material by oblique or vertical direction vapor deposition".

However, in the same field of endeavor, Shi discloses an OLED with banks being formed such that an angle between at least one side face of the banks and a face on which the banks are installed being an acute angle (see Figs. 4 and 6) and the second electrode group is formed by vapor deposition from a vertical direction of the banks in order to provide an easy and discrete pixelation of the display, avoiding the difficulties of an angle technique in a commercial manufacturing line which increases the cost and reduces the production yield (see Col. 2, lines 1-5 and 19-27). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the banks with an acute angle formed between at least one side face and a face on which the banks are installed since Shi teaches that such a configuration allows for an easy and discrete pixelation of the display, avoiding the difficulties of an angle

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technique in a commercial manufacturing line which increases the cost and reduces the production yield.

Regarding claim 17, Tang-Miyashita-Shi discloses the banks being formed such that an angle between at least one side face of the banks and a top face thereof is an acute angle, the second electrode being formed by vapor deposition from a vertical direction of the banks (see Fig. 5 of '931). The same reasons for combining stated in claim 16 apply.

Referring to claims 21 and 22, claims 21 and 22 are rejected over the same reasons stated in the rejection of claims 16 and 17, respectively.

5. Claims 18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang-Miyashita as applied to claims 14 and 19 above, and further in view of Niboshi et al. (US 6,198,215).

Regarding claim 18, Tang-Miyashita discloses the claimed invention except for the limitation of "a non-glare treatment and/or antireflection treatment being carried out on a surface of the EL element". However, in the same field of endeavor, Niboshi discloses an EL device with an anti-reflective layer in order to reduce the reflection of ambient light and improving the contrast ratio of the display, improving the quality of the image (see Col. 2 lines 34-39 in view of Col. 1, lines 44-45 and 54-57). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an anti-glare or anti-reflective layer to the EL element with the purpose of reducing the reflection of ambient light and improving the contrast ratio of the display, improving the quality of the image.

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Referring to claim 23, claim 23 is rejected over the reasons stated in the rejection of claim 18.

6. Claims 14, 16, 17, 19, 21 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Nagayama et al. (EP 0 732 868) in view of Miyashita et al. (WO 98/24271).

Regarding claim 14, Nagayama discloses a method of manufacturing an EL element comprising:

forming a first electrode group 3 by a predetermined arrangement of a plurality of first electrodes on a substrate;

forming a bank group 7 (or 70) by a predetermined arrangement of a plurality of banks intersecting with the first electrode group;

forming an EL material layer 8 by depositing an EL material in between the banks; and

forming a second electrode group 9 separated by the banks by depositing a second electrode material onto the EL material layer.

Nagayama fails to disclose the EL layer being formed by an ink-jet method; Nagayama discloses a vapor deposition method (see Col. 10, lines 13-17).

However, in the same field of endeavor, Miyashita discloses a method of producing organic EL elements and teaches that forming the EL layers with an ink-jet system makes possible to easily effect the patterning within short periods of time while maintaining precision, to easily design films, to optimize the light-emitting property, and to easily adjust the light-emitting efficiency. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Miyashita of forming the EL layers with an

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ink-jet method in order to easily effect the patterning within short periods of time while maintaining precision, to easily design films, to optimize the light-emitting property, and to easily adjust the light-emitting efficiency.

Regarding claim 16, Nagayama discloses the banks being formed such that an angle between at least one side face of the banks and a face on which the banks are installed is an acute angle, and the second electrode group is formed by depositing the second electrode material by oblique or vertical direction vapor deposition (see Figs. 7B, 7D and 7G).

Referring to claim 17, Nagayama discloses the banks being formed such that an angle between at least one side face of the banks and a top face thereof is an acute angle, the second electrode being formed by vapor deposition from a vertical direction of the banks (see Figs. 7C, 7D and 7G).

Referring to claim 19, Nagayama discloses the arrangement being a parallel arrangement (see Figs. 2 and 8).

Regarding claims 21 and 22, claims 21 and 22 are rejected over the same reasons stated in the rejection of claims 16 and 17, respectively.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 14-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-12 of U.S. Patent No. 6,388,377. Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons:

US Application SN 10/090597	US Patent No. 6,388,377	Reasons for rejecting under obviousness-type double patenting
Claim 14	Claim 15	Patent '377 claims a method of manufacturing an EL element comprising: forming a first electrode group by a predetermined arrangement of a plurality of first electrodes on a substrate; forming a bank group by a predetermined arrangement of a plurality of banks intersecting with the first electrode group; forming an EL material layer by using an ink-jet to introduce a liquid of said EL material in between the banks; and forming a second electrode group separated by the banks by depositing a second electrode material onto the EL material layer, thus anticipating claim 14.
Claim 15	Claim 9 in view of claim 15	Claim 9 of Patent '377 claims a method of manufacturing an EL element comprising: forming a first electrode group by a predetermined arrangement of a plurality of first electrodes on a substrate; forming a bank group by a predetermined arrangement of a plurality of banks intersecting with the first electrode group; forming an EL material layer by introducing a liquid of said EL material in between the banks; and forming a second electrode group separated by the banks by depositing a second electrode material onto the EL material layer; wherein the banks are formed such that an angle between

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		<p>side-faces thereof and a face on which the banks are installed is a right angle, and the second electrode group is formed by depositing the second electrode material by oblique vapor deposition from a direction confronting the sides</p> <p>Claims 9 is silent regarding the liquid being introduced using an ink-jet method. However, claim 15 claims the liquid being introduced by an ink-jet method. The Examiner notes that an ink-jet method is well known in the art for liquid deposition in a patterned manner and a person skilled in the art would have conceived using said method. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the ink-jet method of claim 15 in the liquid deposition of claim 9, since it is well known in the art to use said method for liquid deposition in a patterned manner and a person skilled in the art would have conceived using said method.</p>
Claim 16	Claim 10 in view of claim 15	Patent '377 claims the banks being formed such that an angle between at least one side face of the banks and a face on which the banks are installed is an acute angle, and the second electrode group is formed by depositing the second electrode material by oblique or vertical direction vapor deposition. Same reasons for combining stated in the rejection of claim 15 apply.
Claim 17	Claim 11 in view of claim 15	Patent '377 claims the banks being formed such that an angle between at least one side face of the banks and a top face thereof is an acute angle, the second electrode being formed by vapor deposition from a vertical direction of the banks. Same reasons for combining stated in the rejection of claim 15 apply.
Claim 18	Claim 12 in view of claim 15	Patent '377 claims a non-glare treatment being carried out on a surface of the EL element. Same reasons for combining stated in the rejection of claim 15 apply.
Claim 19	Claim 8 in view of claim 15	Patent '377 claims the predetermined arrangement being a parallel arrangement. Same reasons for combining stated in the rejection of claim 15 apply.
Claim 20	Claim 9 in view of claim 15	Claim 20 is rejected over the same reasons stated in the rejection of claim 15.

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Claim 21	Claim 10 in view of claim 15	Claim 21 is rejected over the same reasons stated in the rejection of claim 16.
Claim 22	Claim 11 in view of claim 15	Claim 22 is rejected over the same reasons stated in the rejection of claim 17.
Claim 23	Claim 12 in view of claim 15	Claim 23 is rejected over the same reasons stated in the rejection of claim 18.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 703-305-5987. The examiner can normally be reached on Monday thru Friday, from 8:30 to 5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



gc

May 5, 2003


Kenneth J. Ramsey
Primary Examiner